HOUSE OF COMMONS SESSION 1998–99

ENVIRONMENTAL AUDIT COMMITTEE

Fifth Report

GMOs AND THE ENVIRONMENT: COORDINATION OF GOVERNMENT POLICY

Volume I

Report and Proceedings of the Committee

Ordered by The House of Commons *to be printed*
11 May 1999

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The Environmental Audit Committee is appointed under Standing Order 152(A) to consider to what extent the policies and programmes of government departments and non-departmental public bodies contribute to environmental protection and sustainable development, to audit their performance against such targets as may be set for them by Her Majesty's Ministers; and to report thereon to the House.

The Committee consists of sixteen Members. It has a quorum of four. Unless the House otherwise orders, all Members nominated to the Committee continue to be members of it for the remainder of the Parliament.

The Committee has power:

(a) to send for persons, papers and records, to sit notwithstanding any adjournment of the House, to adjourn from place to place, and to report from time to time;

(b) to appoint specialist advisers to supply information which is not readily available or to elucidate matters of complexity within the committee's order of reference;

(c) to communicate its evidence and any other documents relating to matters of common interest to any committee appointed by this House or by the Lords; and

(d) to meet concurrently with any committee appointed under Standing Order No. 152 (Select committees related to government departments), or any sub-committee thereof, or with the European Scrutiny Committee or any sub-committee thereof, or with any committee appointed by the Lords, or any sub-committee thereof, for the purposes of deliberating or examining witnesses.

The membership of the Committee since first appointment on 12th November 1997.

Chairman: Mr John Horam

Mr Norman Baker
(appointed 2 December)
Mr Bob Blizzard
Mrs Helen Brinton
Mr Cynog Dafis
(appointed 17 November)
Mr Dominic Grieve
Dr Brian Iddon
Mr Tim Loughton
Rt Hon Michael Meacher
(appointed 19 December)*
Mr Laurence Robertson
Mr Malcolm Savidge
Mr Jonathan R. Shaw
Mr Matthew Taylor
(appointed 17 November, discharged 2 December)
Mr Gareth R. Thomas
Mr Paul Truswell
Joan Walley

*The Minister for the Environment has ex-officio membership of the Committee in like manner to the Financial Secretary's membership of the Committee of Public Accounts.

The texts of Committee reports, evidence and press notices are available on the Internet (www.parliament.uk).

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FIFTH REPORT

The Environmental Audit Committee has agreed to the following Report:—

GENETICALLY MODIFIED ORGANISMS AND THE ENVIRONMENT: COORDINATION OF GOVERNMENT POLICY

Summary of Conclusions and Recommendations

1. The Committee's conclusions and recommendations are set out below:

A new approach

(a) We conclude that there is a need for a new strategic approach to complement the work on risks to human health and the environment and the case-by-case focus of the existing system in responding to applications. This should be built on the precautionary approach and seek to balance the industry's commercial agenda with a focus on the possibilities of applications of GM technology that will contribute to the mitigation of the environmental impacts of agriculture. Government must develop new mechanisms and ways for working alongside, and influencing, the industry's research effort to this end.

If necessary Government should re-consider the role of publicly-funded research in this area. (Paragraph 30)

New mechanisms

(b) We conclude that there is a need for an over-arching advisory committee for Ministers to consider the development of GMOs from a perspective above and beyond the examination of applications by the existing regulatory system. This should be a committee of experts and lay members and include the chairmen of the individual advisory committees. Its main tasks should include the provision of published advice to Ministers on:

STRATEGY

— setting the general direction for the role of GMOs in agriculture, defining which impacts will and will not be acceptable and identifying potential for biotechnology to contribute to sustainable agricultural practices;

— the oversight of new developments in biotechnology that may be expected to have wider environmental, social, ethical or economic consequences;

— the identification of the best environmental option to address biodiversity decline through a comparison of GM and non-GM crop management in the context of realising a more sustainable agriculture;

— liaison with any body set up to look at the health effects of GMOs over the longer term;

REVIEW

— the coordination and review of the advice of the existing committees including an audit function with respect to how that advice is used by Government;

— review and assessment of the implementation of the precautionary principle in the advice received, and decisions taken, by Government;

— taking an overview of broader issues relating to biotechnology across their various remits, in particular issues that the individual committees may not be dealing with such as risk/benefit analysis, generic ethical issues and the environmental implications of international trade negotiations;

— the incorporation of people's values in the way policy questions are framed as well as in the eventual decisions on GMOs (the values of citizens rather than compromises brokered between interest groups); and

— the provision of authoritative advice at short notice in response to public alarm over particular issues. (Paragraph 32)

We conclude that a stakeholder forum could serve an important purpose but if it is to be established it should be a distinct entity, but linked to, the committee recommended above. (Paragraph 33)

Public concerns and values

(c) We recommend that the advice of the Royal Commission on Environmental Pollution on the incorporation of public values and concerns be applied to GMO policy. We also agree with Baroness Young's personal view that, if public confidence in the Government's monitoring of genetic modification is to be rebuilt, it is a task for concerted effort by Government over 5 to 10 years. We certainly believe that an improved information strategy is required if the Government is to address what Ministers described as "hysteria" in the press. (Paragraph 36)

(d) We believe that there should be consistent protocols for the inclusion of lay members on all the advisory committees on GMOs. (Paragraph 38)

(e) We recommend consistent arrangements for openness and transparency of proceedings across all the advisory bodies – and we single out the practice of the Advisory Committee on Pesticides as in need of reform. (Paragraph 39)

(f) We recommend that the Government pursue agreement in Europe on detailed guidance on risk assessment in terms of both the procedures to be followed and the evaluation of the results. We further support the proposal of the Royal Commission on Environmental Pollution that there be comprehensive explanations attached to every official decision on GMOs. (Paragraph 40)

Moratoria and farm-scale trials

(g) The Government has secured an agreement with industry that it will not proceed to commercial plantings of GM crops until the farm-scale trials, designed to compare the impacts on biodiversity of GM and non-GM crops have yielded satisfactory results that there is no significant or lasting damage to the environment. (Paragraph 43)

(h) We received assurances that the agreement to delay commercial plantings of GM crops were linked to whatever length of time it took for the trials to produce results; which may be two years, four years or, in the words of the Minister of the Environment, "considerably longer". (Paragraph 44)

(i) We recommend that:

— the Government, its statutory advisers and industry should agree a protocol covering the terms under which the farm-scale trials will be conducted, inspected and concluded and the data interpreted;

— the protocol should also cover the treatment of the produce from the trials over their life, including disposal; and

— the protocol should state clearly that the parties agree that only when its terms are satisfied will commercial planting of the relevant GM crops be able to go ahead if still desired.

This protocol should be published. (Paragraph 45)

The international dimension

(j) We believe that the explicit subordination of a multilateral environmental agreement, such as the Biosafety Protocol, to agreements on international trade rules would be a deeply unfortunate precedent to set. We recommend that the Government must make every effort to revive the negotiations on the Protocol and bring them to a satisfactory conclusion. (Paragraph 48)

(k) We recommend that a Minister from the Department for International Development be appointed to the Cabinet Ministerial Group on Biotechnology and Genetic Modification. (Paragraph 49)

Labelling

(l) We believe that there is likely to be an ever-growing demand for information about the food we eat - both about its constituent ingredients *and* the processes by which it has been produced and the wider impacts that those processes have. (Paragraph 52)

(m) Whilst recognising the difficulties in securing 'labelling for process' we regard it as a valuable goal and we urge the Government to work with industry to achieve it. (Paragraph 52)

Liability

(n) On grounds of promoting public confidence alone we see merit in the inclusion in the EC Directive on the Deliberate Releases of specific provisions for the liability of those with responsibilities for the release of GMOs that cause environmental damage. (Paragraph 55)

(o) We recommend that the UK seek agreement within the EU for a provision on liability to be part of the EU's mandate for further negotiations on the Biosafety Protocol. (Paragraph 55)

Introduction

2. This Committee is charged with reporting to the House on the contribution of Government policies to environmental protection and sustainable development. The potential risks and benefits of biotechnology and genetic modification raise significant issues for sustainable development.

3. In 1996 the non-segregation of genetically modified and conventional soya beans in the United States raised the profile of a longstanding debate over the benefits and risks of genetic modification.[1] In February 1998 the European Commission published proposals for the revision of the European legislation which governs the regulation of genetically modified organisms (GMOs) across the Community (EC Directive 90/220/EEC on the deliberate release into the environment of genetically modified organisms).[2] In February 1999 multilateral negotiations on rules to govern international movements of GMOs foundered on the objections of exporting countries to the level of obligations and liability to which they might be subject.[3] Over the last couple of years there has been mounting public concern in the UK and Europe about the implications of genetic modification for food safety and for environmental protection.

4. Against this background the Government announced in October 1998 the establishment of a Cabinet sub-committee, the Ministerial Group on Biotechnology and Genetic Modification (hereafter 'the Cabinet Committee') with the aim of ensuring that Government's policies develop in a coordinated way.[4] In December 1998 the Government announced two initiatives. The first was a consultation exercise on the people's attitude to biosciences (awareness, understanding and priorities). The second was a review of the framework for overseeing developments in biotechnology, focussing on the Government's advisory and regulatory committees. In addition the Nuffield Council on Bioethics has been examining the social and ethical dimension of genetic modification and is set to report in May 1999.

5. Parliament has not stood idly by. The House of Lords European Communities Committee (Sub-Committee D) reported on the revision of the Deliberate Release of GMOs Directive and related issues (the 'Lords report') in December 1998.[5] The Science and Technology Committee also intends to report on GMOs as a case study in its wider look at the provision of scientific advice to Government.[6] There has also been scrutiny by the European Scrutiny Committee and debate of the revision of the relevant Directive in European Standing Committee. Most recently the Agriculture Committee examined Ministers on 5 May 1999 in the light of the Government's response to the Lords report.[7] Our report draws upon all available material.

6. Our inquiry, announced in February 1999, was aimed at the arrangements within Government for coordinating policy on the development and use of genetically modified organisms in the light of the implications for environmental protection within the context of sustainable development. We highlighted a number of questions in relation to: the need for a more strategic approach to the environmental implications of GMOs; the necessary elements and mechanisms of such an approach; the incorporation of public concerns and values into policy; the provision of consumer choice as it relates to environmental policy; and the scope

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[1] Sixty per cent. of processed foods contain soya or soya derivatives. The US is an important source of Europe's soya. The decision not to segregate the US crop has been described as "having few competitors for top prize for the most spectacular strategic business misjudgement of the 1990s". *Environmental Date Services Report*, August 1999, p18.

[2] 'Genetic modification' and, where applicable, 'GM' and 'GMOs' are used throughout this report. Equivalent terms used in evidence to us include: genetic engineering; genetic manipulation; and DNA recombinant technology.

[3] These rules were contained in the Biosafety Protocol of the United Nations Convention on Biological Diversity. An Extraordinary Meeting of the Conference of Parties to the Convention (ExCOP) (in Columbia in February 1999) was suspended without conclusion. It is to reconvene before the next ordinary COP in May 2000.

[4] See Note 5 below, HL 11-II, Q603. Evidence to this Committee from Ministers indicated that the proposal for the Cabinet Committee originated in May 1998, Q282.

[5] Second Report from the Select Committee on the European Communities (Sub-Committee D, Agriculture, Fisheries and Food),1998-99, HL 11-I

[6] Likely to be published as the First Report, 1998-99, HC286.

[7] Likely to be published as HC427-i, 1998-99.

Government action within the EU and WTO obligations. We also asked whether there were adequate arrangements for civil liability on GMO-related environmental damage.[8]

7. Our inquiry focussed on the Government's approach to these matters rather than attempting to assess the available evidence for and against the use of GMOs. We have not examined policy on GM food and human health in detail. This report is intended to complement the environmental dimension of the Government's forthcoming conclusions on genetic modification. Given this aim the inquiry has been necessarily a short one with oral evidence restricted to Ministers and their advisers on science and nature conservation as set out below.

8. We received memoranda from a range of sources: the Government, environmental groups, the industry and the scientific community.[9] We took oral evidence from Baroness Young of Old Scone, Chairman, and Dr Keith Duff, Chief Scientist, English Nature, (the Government's statutory adviser on nature conservation in England); Sir Robert May, the Government's Chief Scientific Adviser and Head of the Office of Science and Technology (OST); Rt Hon Dr John Cunningham, MP, Minister for the Cabinet Office and Chairman of the Ministerial Group on Biotechnology and Genetic Modification (MISC 6); and Mr Jeff Rooker, MP, Minister of State, Ministry of Agriculture, Fisheries and Food (MAFF) & Rt Hon Michael Meacher, MP, Minister for the Environment, Department of the Environment, Transport and the Regions (DETR). We were grateful for the advice of Ms Julie Hill, The Green Alliance and member of the Advisory Committee on Releases to the Environment and Mr Derek Osborn CB, Chairman of the European Environment Agency.

9. Many of our submissions, and of course the Lords report, set out a great deal of the background, history and detail of the science involved.[10] Genetic modification is a branch of biotechnology involving the alteration of the genes of an organism so as to produce a new or 'modified' organism capable of producing new substances or performing new functions.[11] Current usage implies the manipulation or introduction of genetic material which could not have been achieved using traditional breeding methods (although accepted techniques can in some cases both defeat sexual incompatibility[12] and deliver similar traits sought from genetic modification to date[13]). The current generation of GMOs, and of particular focus in this report, are GM crops (predominantly maize, soya, oilseed rape and sugar beet) modified to be either: tolerant of a particular herbicide; able to resist insects by the production of toxins; or both.[14]

Government's approach to genetic modification

10. The Government's approach to biotechnology and genetic modification was described by Dr John Cunningham, Minister for the Cabinet Office as "the need to strike a careful balance" between capturing the potential benefits whilst always protecting human health and the environment.[15] This was set out by the Minister in announcing the review of the framework for biotechnology oversight as follows:

> "The Government believes that the protection of human health must be the first priority in regulating biotechnology. The impact on the environment and on biodiversity must also be throughly assessed, and the ethical issues raised by biotechnology fully taken into account. At the same time, the Government believes that this technology has the potential to offer enormous

[8]Environmental Audit Committee, Press Releases: 8 and 10, Session 1998-99

[9]A full list is set out at the back of this report. The written and oral evidence taken by the Committee is published in a separate volume, HC384-II.

[10]*Passim*

[11]Alteration includes the rearrangement or deletion of existing genes or the insertion of genes from another organism.

[12]For example, where an embryo produced from two normally incompatible plants, which would normally abort, is artificially preserved - "embryo rescue".

[13]For example, herbicide tolerance, see Q287

[14]There is currently no commercial cultivation of GM crops in the UK. About 300 hectares were under cultivation for trial and research purposes in 1998. Three GM products have been approved for sale in the UK: slow ripening tomatoes used in a paste (since 1996); and herbicide tolerant soya and maize used in a wide variety of processed foods (since 1996). In addition a number of genetically modified enzymes have been used in food production since 1990.

[15]Q165

opportunities for improving the competitiveness of the economy and the quality of life in terms of health, agriculture, food and environmental protection, and that regulation should facilitate technological development by not imposing unjustified burdens on the biotechnology industry..."[16]

Dr Cunningham is Chairman of the Cabinet Committee established to " to ensure that as the technology develops Government policies are properly thought through and coordinated".[17] The Committee's membership spans the wide range of departments with a policy interest: Environment, Transport and the Regions; Agriculture, Fisheries and Food; Trade and Industry; Health; the Home and Foreign Offices; and the Treasury. In addition to this ministerial group an official-level network, the Inter-departmental Group on Genetic Modification Technology, "provides a forum within Government for debate of GM policy across Government".

11. The Government sees the UK as having a substantial stake in the economic success of the biotechnology industry, not least because of a large contribution to the science behind the technology.[18] Dr Cunningham told us that the UK was a world leader in the industry, second only to the United States, with about 250 companies employing 14,000 people. The world market was forecast to reach £70 billion by 2000 of which the UK's share might be about £10 billion. Biotechnology had significant implications for up to a quarter of the UK's industrial output – including the pharmaceutical chemical, diagnostics and agri-food industries which together provided employment for about 6% of the UK workforce and accounted for 7% of GDP.[19] The UK's current annual spend on biotechnology research and development is £600 million. Dr Cunningham described the UK's interests in the sector as "formidable".[20]

12. In a recent speech to the industry, which emphasised the importance of public confidence in the technology, the Secretary of State for Trade and Industry, Rt Hon Stephen Byers, MP, described the sector as "in hard economic terms ... an industry of the future - a knowledge driven industry - with great potential to create wealth and jobs. Exactly the sort of industry the Government wishes to promote."[21] The Department for Trade and Industry (DTI) is the sponsoring department for the industry and in its submission to us stressed the primary duty of Government to protect people and the environment but also that "this must be done in ways that do not deny people the healthcare, environmental, economic and other benefits that flow from technological advances."[22]

13. Food safety is primarily the responsibility of MAFF which is the competent authority under the relevant EC legislation[23] for approval of new products, including GM food, advised by the Advisory Committee on Novel Foods and Processes (ACNFP). Mr Rooker stressed that the Food Standards Agency, reporting to health ministers, will take on these responsibilities once established and that, in the interim, food safety decisions are taken jointly between himself and the Minister for Public Health.[24] MAFF of course has responsibility for UK agricultural policy, within the constraints of the Common Agricultural Policy (CAP). Overall this task includes efforts to make agriculture more sustainable and to encourage lower-input and organic modes of production. MAFF has published a set of indicators for sustainable agriculture for consultation. A modus vivendi between GM producers and, particularly organic farmers, will need to be established and may require Government facilitation. A specific responsibility of the Ministry is in relation to the regulation of pesticides, advised by the Advisory Committee on Pesticides (ACP). This is of major significance in the GM debate given that most current GM crops are related to herbicides, to which they are tolerant, or to pesticides, which plant-produced toxins may replace. Government policy is that pesticides which are to be used on GM crops have to go through the approval process again in relation to this new use.

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[16] HC Deb, 17 December 1998, *wa*
[17] Q165
[18] Q298
[19] Q236
[20] *Ibid*
[21] Speech to Biotechnology Industry Association, 21 January 1999
[22] Appendix 18 (DTI)
[23] *EC Novel Foods and Novel Food Ingredients Regulations, May 1997*
[24] Q381

14. The environmental implications of GMO release are the responsibility of DETR. The department is the competent authority for consent to all GMO releases, experimental and commercial, to the UK environment from single plants in pots outside to field- and farm-scale trials. The regulatory system is governed by statute and EC legislation[25] with the latter currently undergoing revision as mentioned above. DETR is advised by the Advisory Committee on Release to the Environment (ACRE) made up predominantly of scientific experts whose task is to assess individual applications to release GMOs. DETR, advised by ACRE, is also responsible for the UK's position on applications made to other EU Member States for consent to market GMOs. Applications under this system must "demonstrate that the release will avoid adverse effects to the environment".[26]

15. The implications of GMOs for the environment are the subject of heated debate and a range of views. At one extreme are Greenpeace, Friends of the Earth and others arguing for a freeze on all releases (and on marketing of GM food) while more research is undertaken on environmental, and other, impacts and the `big picture' questions (for example 'do we want GMOs?') are asked and answered.[27] At the other extreme are those who point to the example of already substantial cultivation of GM crops in the United States and who argue that delays within the EU system are the result of political inertia and give a misleading impression that substantive evidence of risk is being considered. A theme common on both sides of the debate is a lack of evidence. For example, Novartis UK Limited states: "There has been much speculation about potential environmental damage from GMOs but no group has been able to give any evidence for this potential damage".[28] Equally, evidence from English Nature states "it is important to note that 'environmental benefits' have been claimed for GMO use, but have never been demonstrated in terms of benefits for wildlife".[29]

Handling potential risks

16. The current generation of GM crops, pose potential risks to the environment in two ways. There is the risk of direct impacts in the spread of novel genes to wild species introducing hybrids with problematic characteristics such as multiple-resistance to herbicides (giving rise to the so-called 'superweed' scenario) or insect resistance. This can be exacerbated by the incidence of 'volunteer' plants where seed remains in the soil to grow in subsequent years (whatever that field is being used for).[30] A further possible impact is unwanted effects on non-target species of toxins produced by modified pesticide resistant plants. However, the focus of concern in our evidence has been on the indirect risks that altered farming practices, enabled by GM crops, will further encourage the intensification of agriculture that has already contributed significantly to declines in biodiversity.[31]

17. In the UK where 75 per cent. of available land is farmed, agriculture and wildlife must therefore co-exist in a way that is not the case in the United States, for instance, where land for agricultural production (about 30 per cent.) and land for nature conservation are separated. As the Lords report commented, in contrast to the aims of UK regulation of GMOs, the stated aim of the main US regulatory agency is the protection of American agriculture rather than the environment.[32] Direct comparisons therefore are invalid. The UK Biodiversity Action Plan and the EU Biodiversity Strategy commits the Government to conserving and enhancing biodiversity by encouraging wildlife-friendly land management and the integration of biodiversity into other sectors including agriculture. Our evidence was clear that the intensification of agricultural

[25]EC Directive 90/220/EEC on the deliberate release into the environment of genetically modified organisms implemented in the UK by the Genetically Modified Organisms (Deliberate Release) Regulations 1992 (as amended in 1995 and 1997) together with Part IV of the Environmental Protection Act 1990.
[26]Ev p62
[27]Appendix 5
[28]Appendix 11 (Novartis UK Limited)
[29]Ev p3
[30]Evidence from the Royal Society of Chartered Surveyors, Appendix 12, sets out the concerns of land managers in respect of the future status of land previously used for growing GM crops.
[31]Ev p1 and ff.
[32]HL 11-I, 1998-99, paragraph 47. In the US as a general principle the transfer of genes to the environment at large is only of significant concern if there is a likelihood that they will cross back into the managed agricultural environment.

practice was putting UK biodiversity in jeopardy. Baroness Young told us that: "The experience over the last 30 years of intensification under the Common Agricultural Policy (CAP) is that these common species have very much declined - some by as much as 70 per cent. and, indeed, in some species by as much as 80/90 per cent."[33] Baroness Young described the position as "backs to the wall time for farmland biodiversity".[34] Mr Meacher agreed. He told us that: "There is no question that we have got to reverse this decline ... brought about primarily, let us be clear, by the intensification of agriculture which has occurred in this and other European countries since the war. That is overwhelmingly the main cause."[35] Mr Rooker agreed with the need to address declining biodiversity "if it were possible" within CAP obligations.[36]

18. The problem is one of agricultural policy as a whole. The question raised by GMOs, in common with other agricultural innovations, is over the nature of their contribution to the problem. Evidence from the ACRE, the industry grouping Supply Chain Initiative on Modified Foods (SCIMAC), DETR and MAFF all points to a lack of baseline data and a poor understanding of the ecological and environmental impacts of current agricultural practices.[37] SCIMAC argued that without such baseline data and an understanding of the impacts of current agricultural practice there was no effective way to provide a comparative evaluation of the effects of GM crops in the future.[38] Mr Meacher told the Agriculture Committee that there was an 'astonishing' lack of systematic international data on the environmental impact of existing GM crops given their cultivation, in the US, for over a decade.[39]

19. Sir Robert May, the Chief Scientific Adviser, described the current thrust of GM technology as accelerating the realisation of "the ages-old dream" of growing crops that nothing eats but us.[40] English Nature stressed that it was not against GM technology *per se* recognising with other witnesses that it could have the potential to mitigate the environmental problems of intensive agriculture. But, it noted that most of the arguments about these benefits are about the volume of biocides used rather than their impact and that "the current trend in GM crops is to develop traits that will allow even more intensive use of biocides" leading to weed-free and insect-free fields.[41] Other concerns were voiced by English Nature and the new Countryside Agency, amongst others, over the potential for GM technology to produce crops and grasses with resistance to lower temperatures or salt thus putting pressure on land (such as moorland, heath, rough grazing and estuaries) that currently provided refuges for wildlife. The Countryside Agency, English Nature and the Royal Society of Chartered Surveyors also pointed out the economic benefits derived from the amenity values of a diverse landscape and wildlife populations.[42]

20. The possibility of GMOs encouraging adverse effects through changing agricultural practice was presented by witnesses as far more significant than direct effects. Unfortunately ACRE's statutory task, undertaken well by virtually all accounts[43], has been to focus on the latter category. Dr Julian Kinderlerer from the Sheffield Institute of Biotechnological Law and Ethics, former member of ACRE and adviser to the Lords Sub-Committee D, wrote that ACRE's "case by case analysis ... is not sufficient to ensure total safety ... has not allowed consideration of the likely changes in farming practice due to the new technology, nor has it considered the impact of these changes on the wider environment."[44]

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[33] Q4
[34] Q75
[35] Q280
[36] Q282
[37] Appendix 15 (SCIMAC); *Environmental Effects of Agriculure,* DETR, July 1998; *The commercial use of genetically modified crops in the UK: the potential wider impact on farmland wildlife,* ACRE, February 1999.
[38] Appendix 15 (SCIMAC)
[39] Evidence taken before the Agriculture Committee, 5 May 1999, HC427-i.
[40] *Genetically Modified Foods: facts, worries, policies and public confidence*, UK Chief Scientific Adviser, Office of Science and Technology, February 1999.
[41] Ev p4
[42] Ev p3 and appendices 1 (Countryside Agency) and 12 (Royal Institute of Chartered Surveyors).
[43] But see Appendix 4 (Friends of the Earth).
[44] Appendix 14

21. In response to these types of concern the remit of the Advisory Committee on Releases to the Environment (ACRE) has been extended to include the consideration of wider and indirect environmental effects (in line with proposed provisions of the Directive). Witnesses welcomed the extended remit of the advisory committee but questioned whether it was a sufficient answer to the problem.[45] The Royal Commission for Environmental Pollution (RCEP) has recently concluded that "No satisfactory way has been devised of measuring risk to the natural environment, even in principle, let alone defining what scale of risk should be regarded as tolerable."[46] This appears to pose a huge methodological challenge to ACRE, a committee already groaning under the weight of work.[47] A second initiative is the UK farm scale trials planned with the stated aim of assessing the impact of herbicide tolerant GM crops on biodiversity in comparison with those of equivalent non-GM crops (and we return to these below). We look forward to the conclusions of the Government's review of the biotechnology framework which we expect to have addressed this issue.

Handling potential benefits

22. Mr Rooker told the Science and Technology Committee that the Government's role was to regulate and not to stop or push particular technologies or products.[48] All Ministers confirmed that self-evidently the Government was not in the driving seat as far as developing the technology went.[49] In explanation to us Mr Rooker said "so far as ... taking the science forward, that is a matter for the companies concerned. The Government is in the role ... of guardian of the public interest."[50] We would contrast this attitude to GMOs with the Government's willingness to 'push and stop' other technologies and products in line with its policy objectives. For example the Non-Fossil Fuel Levy has been working to push innovative forms of energy, nuclear to begin with, renewables such as wind and solar more recently. Equally, the Government is operating a temporary strict consents policy to stop development of particular energy-generating technologies to allow sufficient time for the framework of the energy market to be reformed. Mr Rooker responded: "we are not going to tell people what to eat. That is the issue. The only advice the Government gives people on their diet is to eat more fresh fruit and vegetables and have a balanced diet. Our job as regulators is to ensure that the food that is out there is safe ... pushing a particular product or a particular process of food manufacture, that is not the Government's function." [51] This neutral stance does not chime with the emphasis of Sir Robert May that "the main reason why we have to remain a player in this is to try to make sure that these new technologies are indeed harnessed in ... a more environmentally friendly, less relying on fossil fuel subsidies and more sustainable way to produce the agriculture of the future."[52]

23. The weight of evidence for the potential benefits of the bulk of GM crop varieties coming forward is, as one would expect from their provenance, on their potential for increased yield and like features. Mr Rooker told the Agriculture Committee that the benefits of current GM developments, slow-ripening tomatoes aside, are all producer-benefits concentrating on yield rather than nutrition or taste (and consequently was a public relations disaster).[53] Sir Robert May told us that while he believed that it was plainly in the industry's interest to avoid a health or environmental disaster at all costs, "I do not believe that the commercial motivations of Monsanto or anyone else are the guarantee that they will be developing the things which are most useful for the world as distinct from most profitable for them."[54]

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[45] See for example Appendices 4 and 14.
[46] *Setting Environmental Standards,* RCEP, Cm 4053, p56.
[47] Evidence before by the Science and Technology Committee, from Professor John Beringer, Chairman, ACRE, HC286-iv.
[48] HC286-vii
[49] Q291
[50] *Ibid*
[51] Q307
[52] Q138
[53] HC427-i
[54] Q139

24. Significant potential environmental benefits have been asserted. The Government's memorandum states, albeit cautiously, that genetically modified crops have the potential to reduce herbicide use; reduce tractor use (with implications for soil erosion, nutrient leaching and carbon emissions); and there is the potential for creating further resistance to pests and diseases as well as improving the yield from plants of renewable resources currently derived from fossil sources.[55] Other benefits have been suggested to us such as the potential to improve the nitrogen fixing of crops (reducing the need for artificial fertilisers) and in evidence both Mr Meacher and Sir Robert May referred to a range of other possible developments from drought-resistance to the inclusion of vaccines.[56] We were disappointed however, to see from a DETR report on the environmental impact of agriculture that "little if anything has been done to investigate the environmental and agronomic benefits of biotechnology." The report goes on to say that "It is also worth noting that in the case of environmental benefits associated with other technological improvements in agriculture, Government funded research provides an impartial assessment in advance of commercialisation ... In the case of GM crops, investment in this valuable research is conspicuously absent."[57]

The consideration of risks and benefits together

25. This question of benefits as against risks, environmental or otherwise, is not one that has to be addressed in the current regulatory regime and this may explain the absence of research on the matter. The memorandum from Government states: "The current directive does not permit possible benefits to be taken into account. Releases of GMOs are judged solely on the basis of an assessment of the risks to human health and the environment which must demonstrate that the release will avoid adverse effects to the environment." The statement goes on to say that "There have been calls for, and the European Parliament has proposed, the incorporation of an assessment of the benefits in the revised Directive and the Government is considering whether to support the inclusion of such a provision."[58] The European Parliament's amendment introduces a requirement for a study of the likely "socio-economic" costs and benefits of a proposed release. We would appreciate clarity as to whether this includes likely environmental benefits.

26. We recognise that the integrity of a system aimed at assessing the risk of harm to human health or the environment from a release, and providing advice thereon, would be damaged by the incorporation of trade-offs between small risks and large benefits. There would almost certainly be justifiable outrage in a case where a small health risk was set aside in favour of a substantial and more certain economic benefit. However, an assessment of 'negative risk' (a benefit) could be contemplated, not as a trade-off mechanism, but as a further hurdle, in terms of a specific requirement for applications to include in their submissions an assessment of the direct and indirect environmental benefits, where they exist. This may encourage the industry to consider these issues in more depth.

The case for a new approach

27. In terms of its role to regulate to protect the environment the Government's memorandum stated that the requirements of the Deliberate Release Directive and the work being done to develop a common EU approach to risk assessment meant that a strategy for assessing and managing the environmental implications of GMO release was in place. In oral evidence, however, Mr Meacher suggested that the review of the biotechnology framework was to identify a strategic approach to wider issues.[59]

28. Many witnesses called for strategic approach above and beyond the necessarily reductive and reactive line taken by the existing advisory committees.[60] ACRE itself, in the discussion paper on its new wider remit, concluded "the present legislation does not take a strategic

[55] Ev p63
[56] QQ137 and 398
[57] *Environmental Effects of Agriculture,* DETR, July 1998, p156
[58] Ev p62-63
[59] QQ293-7
[60] See for example appendices 4, 5, 6, 10 and 14.

approach to regulating GMOs and reacts to developments by assessing applications...as they are submitted on a 'first come, first served' basis. Government needs to consider whether more could be done with the industry, farmers and conservation groups to identify the scope for certain types of GMOs to play a positive role in developing sustainable farming systems which enhance farmland wildlife."[61] This would appear to support the Chief Scientific Adviser's advice for some of the 'pushing' if not the 'stopping' that Ministers felt was outside the Government's regulatory role. As Baroness Young told us: "somebody somewhere needs to be looking at how we get the potential benefits assessed and developed, if indeed there are potential benefits of GM crops, because at the moment we get lots of assertion about the benefits but nobody is doing terribly much to bring those to the marketplace."[62] Mr Meacher told us that the Government was concerned to "nudge" GM development in this direction but what the Government cannot do is prescribe exactly what shall or shall not be pursued.[63]

29. As an example of influence of the direction of GMO development, the Government's memorandum cited guidance issued by DETR regarding risks which might be of concern in relation to large scale commercial release. The example quoted was the use of antibiotic resistant marker genes used as research tools. Government guidance is that these genes should be excised at an early stage of plant development. Sir Robert May told us that the contribution of this source to evolving human antibiotic resistance is "a drop in the bucket" compared with the over-consumption of antibiotics directly by humans and indirectly through use on animals.[64] We concur with Sir Robert and with the Lords report that, given the development of alternatives and the potential for excision before release, there is no need to risk adding to the problem of human resistance and the practice of releasing GMOs with antibiotic resistant genes should be abolished.

30. **We conclude that there is a need for a new strategic approach to complement the work on risks to human health and the environment and the case-by-case focus of the existing system in responding to applications. This should be built on the precautionary approach and seek to balance the industry's commercial agenda with a focus on the possibilities of applications of GM technology that will contribute to the mitigation of the environmental impacts of agriculture. Government must develop new mechanisms and ways for working alongside, and influencing, the industry's research effort to this end.** Ministers recognised concerns about the effects of the reforms of the 1980s under which research institutions now operate almost invariably with a mix of public and commercial funding.[65] **If necessary Government should re-consider the role of publicly-funded research in this area.** Ideally this approach should be placed within a strategy to promote a more sustainable UK agriculture for which MAFF has published a set of indicators.

31. This new approach suggests that new mechanisms are needed. A number of witnesses pointed to the Cabinet Committee as signalling an improvement in the coordination of government policy and strategic approach.[66] We believe that Cabinet Committees are useful for government but are not designed for openness and the demonstration of how decision are taken. This is not a criticism. Ministers remain accountable for decisions taken in whatever forum. We welcome the establishment of the Committee given that the coordination and cohesion of the different department's interests in this complex policy area is vital. We especially welcome evidence that the Committee, fully attended by Ministers, is taking a hands-on approach to this "fraught" topic on a regular basis.[67]

32. The Royal Society, English Nature, the Royal Society for the Protection of Birds, the RCEP and the Lords Sub-Committee D, amongst others have all called for new advisory

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[61] *The commercial use of genetically modified crops in the UK: the potential wider impact on farmland wildlife,* ACRE, February 1999.
[62] Q30
[63] Q309
[64] *Genetically Modified Foods: facts, worries, policies and public confidence,* UK Chief Scientific Adviser, Office of Science and Technology, February 1999.
[65] Q315
[66] See for example appendices 9 and 11.
[67] Q277

structures to over-arch, or to parallel, the existing system. **We conclude that there is a need for an over-arching advisory committee for Ministers to consider the development of GMOs from a perspective above and beyond the examination of applications by the existing regulatory system. This should be a committee of experts and lay members and include the chairmen of the individual advisory committees. Its main tasks should include the provision of published advice to Ministers on:**

Strategy

- **setting the general direction for the role of GMOs in agriculture, defining which impacts will and will not be acceptable and identifying potential for biotechnology to contribute to sustainable agricultural practices;**
- **the oversight of new developments in biotechnology that may be expected to have wider environmental, social, ethical or economic consequences;**
- **the identification of the best environmental option to address biodiversity decline through a comparison of GM and non-GM crop management in the context of realising a more sustainable agriculture;**
- **liaison with any body set up to look at the health effects of GMOs over the longer term;**

Review

- **the coordination and review of the advice of the existing committees including an audit function with respect to how that advice is used by Government;**
- **review and assessment of the implementation of the precautionary principle in the advice received, and decisions taken, by Government;**
- **taking an overview of broader issues relating to biotechnology across their various remits, in particular issues that the individual committees may not be dealing with such as risk/benefit analysis, generic ethical issues, and the environmental implications of international trade negotiations;**

Articulation of public values

- **incorporation of people's values in the way policy questions are framed as well as in the eventual decisions on GMOs (the values of citizens rather than compromises brokered between interest groups); and**
- **provision of authoritative advice at short notice in response to public alarm over particular issues.**

In appointing such a committee the Government must have regard to the demands of credibility - expertise in a wide range of fields; independence from vested interests; and openness and transparency (to which we return below).

33. The Government specifically raised the question of an environmental stakeholder forum in its review of the biotechnology framework. We regard this as serving the distinct purpose of seeking to build consensus around the issues between explicitly interested parties and must include representatives of all the industries and businesses involved, consumer representatives, environmental groups and representatives of wider civil society. In this context we note the submission of the Environment Council on 'managed stakeholder dialogue' and commend the principles therein.[68] **We conclude that a stakeholder forum could serve an important**

[68] Appendix 3

purpose but, if it is to be established, it should be a distinct entity, but linked to, the committee recommended above.

Public concerns and values

34. Clearly there is concern amongst the public about GM food and genetic modification in general. There are also wider issues of the confidence of the public in the advice that is offered to Government and, perhaps more significantly, the way that advice is then used. This is linked to recent experiences and the way that episodes relating to BSE, e coli, listeria and salmonella were dealt with. There is the potential for a deep and harmful divide between Government's concept of 'sound science' and public opinion. The findings of the review of attitudes to bioscience are eagerly awaited and Dr Cunningham heralded some "uncomfortable reading for Ministers".[69] He also told us that, in terms of public understanding the debate was not assisted by the recent "barrage of media hysteria".[70] We look to Government to address the underlying factors which give such stories credibility with the public. Sir Robert May told us that internationally where citizens demonstrate a greater degree of understanding of science (not just 'factoids') they tended also to worry more about it. The UK usually scored second or third in Europe in such exercises.[71]

35. The Government's written evidence to us on the existing mechanisms for incorporating public values and concerns alongside the results of scientific assessment within the decision-making process on GMOs is worth quoting in full:

"The Regulations require that all applications to release GMOs are advertised in a local newspaper within 10 days of the application being submitted to the DETR. Information about proposed releases and applications to market GMOs is placed on public registers held at regional offices of the Environment Agency and on the DETR website in sufficient time to allow public comment. The advice from ACRE to the Secretary of State about whether, and under which conditions, a consent should be issued is also placed on the website and the public registers before a final decision is taken. ACRE's scientific advice and all comments received from the public are taken into account in making that final decision."[72]

36. We think this is plainly inadequate. The recent report of the Royal Commission on Environmental Pollution (RCEP), *Setting Environmental Standards*[73], recommended that DETR should consider how new methods for articulating public values should be incorporated into the procedures for considering environmental issues and setting environmental standards, including the framing of questions to be addressed in analysis and communicating the results in a comprehensible form. **We recommend that the advice of the Royal Commission on Environmental Pollution on the incorporation of public values and concerns be applied to GMO policy. We also agree with Baroness Young's personal view that, if public confidence in the Government's monitoring of genetic modification is to be rebuilt, it is a task for concerted effort by Government over 5 to 10 years. We certainly believe that an improved information strategy is required if the Government is to address what Ministers described as "hysteria" in the press.** Underpinning this, a clear strategy is needed for what the UK wants out of biotechnology to provide people with an idea of what the benefits are and why, therefore, the efforts and taxpayers' resources put into the regulation are worth it.

37. The principal concerns expressed in evidence about the advisory system were perceptions that the advisory committees were not sufficiently independent of the industry; that they were not adequately open nor transparent; and that they did not have sufficiently broad memberships. There appears to be a tension between two of the demands of credibility for an advisory system: for expertise and independence. In the biotechnology sector expertise is often linked with the industry. This is sometimes direct employment but more often it is through less direct funding

[69] Q213
[70] QQ165
[71] Q158
[72] Ev p63
[73] *Op. Cit.*, Cm 4053, p112

links caused by the Rothschild reforms of the 1980s which encouraged research institutions to go out and secure funding from industry creating closer links between the science base, public research and commercial interests. We have not received convincing evidence of undue influence being effected through these indirect channels. ACRE traditionally has had two members directly employed by the industry.[74] Mr Meacher told us that, without reflection on the work or integrity of the members concerned, this practice would not continue because of the need for ACRE's independence to be above a peradventure of a doubt. He said that industry representation would be catered for elsewhere in the system, heralding clearly the establishment of an environmental stakeholders forum.[75]

38. The regulatory system for GMOs is technical rather than ethical. The UK Environmental Law Association (UKELA) contrasted the approach to GMOs with the regulation of human genetic manipulation which they describe as having been introduced on the basis of widespread public agreement about what was ethically acceptable. There is no equivalent consensus on GM crops - and no mechanism to seek to build one.[76] While this should primarily be a task for a body over-arching the regulatory system, we believe that there must also be lay personnel on each of the advisory bodies. Mr Meacher told us that the creation of a strategic forum would obviate the need for lay representation from environmental groups within ACRE.[77] Technical expertise is vital of course and must be the mainstay of the advisory bodies however, we believe there must be a leavening of the scientists' approach to what is significant by persons with other frames of reference and non-scientific expertise. We applaud Mr Rooker's commitment to this integrated approach.[78] **We believe that there should be consistent protocols for the inclusion of lay members on all the advisory committees on GMOs.**

39. Openness and transparency are also key elements in any attempt to improve the confidence of the public in this process. While the agenda and minutes of meetings of the ACNFP and ACRE may not often be the subject of debate in the pub, their accessibility, as well as ACNFP's open meetings are to be welcomed as contributions to the potential for informed debate. This also should be consistent across the regulatory and advisory bodies. Here MAFF does not score so highly as many witnesses commentated on the lesser openness of the Advisory Committee on Pesticides.[79] **We recommend consistent arrangements for openness and transparency of proceedings across all the advisory bodies - and we single out the practice of the Advisory Committee on Pesticides as in need of reform.**

40. We received a further proposal to this end by UKELA for the Government to provide detailed guidance on the criteria which the regulatory bodies should apply in its decision-making.[80] This would appear to be being addressed at a European level in terms of the debate over the guidance on risk assessment to be annexed to any revised Deliberate Release Directive. We note the trenchant criticisms made about these annexes by witnesses to the Lords inquiry.[81] We believe that while it is important for there to be guidance on the questions that are asked it is even more important for there to be guidance on the interpretation of the answers. **We recommend that the Government pursue agreement in Europe on detailed guidance on risk assessment in terms of both the procedures to be followed and the evaluation of the results. We further support the proposal of the Royal Commission on Environmental Pollution that there be comprehensive explanations attached to every official decision on GMOs.**

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[74] A legacy of its health and safety provenance.
[75] Q374 and 377
[76] Appendix 16
[77] Q377
[78] Q379
[79] See for example Appendix 6.
[80] Appendix 16
[81] HL 11-I, paragraph 93

Scope for UK action

41. The scope for action on GMOs by the Government is circumscribed by a number of factors. The Government's role is regulatory as Mr Rooker emphasised.[82] This role is governed by EC legislation to which reference has already been made. Individual applications are subject to Community-wide procedures. In addition the UK and the EU as a whole are bound by the disciplines of the World Trade Organisation (WTO).

Moratoria and voluntary agreements

42. There has been debate and vigorous campaigning on the subject of a UK moratorium on the import or release of GMOs for any purposes for at least five years - the Five Year Freeze - on the grounds of the precautionary principle and levels of uncertainty over the long term impacts of the release and consumption of GMOs. The Government's reply initially was that the imposition of a moratorium would not stand up to challenge under WTO rules.[83] Friends of the Earth and the RSPB commissioned legal opinion which, perhaps not surprisingly, took a contrary view (the conclusions of which are set out in evidence in Appendix 4). English Nature was at pains to make its position clear on the question of a moratorium. Baroness Young told us "what we want is a period of research sufficient to have proper field-scale trials, and have enough time to analyse that data and come to conclusions as a result, and that fuller-scale commercial releases should not happen until that has happened ... The research that is currently under way will be complete by 2003. Depending on what it finds, it may or may not be a simple process of coming to a decision as to what its impact is ... the important thing is that this is going to be done on a stepwise basis because you cannot actually make decisions about what happens next until you have seen the result of what happened at the previous stage." [84]

43. In evidence to us Mr Meacher changed the emphasis of the Government's position in saying that "even if we were able to take unilateral action we do not think that it is the best way forward." Mr Meacher told us that **the Government has secured an agreement with industry that it will not proceed to commercial plantings of GM crops until farm-scale trials, designed to compare the impacts on biodiversity of GM and non-GM crops have yielded "satisfactory results ... that there is no significant or lasting damage to the environment."**[85] Ministers argued that this achieved the precautionary aims of a moratorium without legal entanglement or stopping the trials because under the terms of a strict moratorium these trials could not go ahead.[86]

44. We remain concerned about the level of certainty attaching to this agreement given its voluntary status. We recognise that it is in the industry's interests to get this right but also that there are significant investments at stake and hence a commercial pressure to proceed expeditiously. The voluntary status of an agreement may become a problem in the event of a dispute arising between industry, Government or other interested parties concerning the interpretation of the data, or, more likely, if disputes arise as to when to call it a day and declare the results sufficiently meaningful to draw conclusions. We asked Ministers about the timescales. **We received assurances that the agreement to delay commercial plantings of GM crops were linked to whatever length of time it took for the trials to produce results - which may be two years, four years or, in the words of Mr Meacher, "considerably longer".**[87]

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[82] Q405
[83] See Appendix 4
[84] QQ24 & 25
[85] QQ346 to 351. The Government has agreed with the industry to field-scale trial plantings of spring and autumn sown herbicide tolerant oil-seed rape and maize - 6 to 10 fields this year rising to 60 to 75 next year - to determine the impact of GM cultivation on biodiversity compared with its non-GM equivalent. These trials are outside legislative requirements but are part of the UK's unilateral precautionary approach. The trial plantings will be run under guidelines for management developed by the industry grouping SCIMAC (The Supply Chain Initiative for Modified Crops) to meet Government specifications.
[86] QQ346 to 351
[87] Q332

45. In the event of dispute we remain concerned about the ability of Ministers ultimately to stop commercial plantings going ahead. Mr Meacher described the four hurdles to commercial cultivation of GM crops as: approval under Part C of the Deliberate Release Directive; approval as a novel food; National Seed Listing; and approval for a new use of herbicide.[88] However, we remain unclear whether a GM crop - *already* approved under the Deliberate Release Directive *et al,* and only awaiting variety listing, or the registration of herbicide change of use - could be prevented from going ahead on precautionary environmental grounds once it has passed either or both of these final hurdles. **We recommend that:**

- **the Government, its statutory advisers and industry should agree a protocol covering the terms under which the farm-scale trials will be conducted, inspected and concluded and the data interpreted;**

- **the protocol should also cover the treatment of the produce from the trials over their life, including disposal; and**

- **the protocol should state clearly that the parties agree that only when its terms are satisfied will commercial planting of the relevant GM crops be able to go ahead if still desired.**

This protocol should be published.

The international dimension

46. Trade in GMOs and GMO products between WTO members is subject to GATT rules on non-discrimination between importing countries and between domenstic and imported products. Exceptions are granted by Article XX in order to protect human, animal or plant life or health (XX(b)); and to conserve exhaustible natural resources (where measures are taken in conjunction with domestic restrictions) including environmental and biological resources (XX(g)). Article XX(b) is given practical meaning by the WTO Sanitary and Pytosanitary (SPS) agreement which recognises the right of states to take relevant measures based on scientific principles and not maintained without scientific evidence. Measures may be provisionally adopted on available evidence (the precautionary principle) but additional information must be sought to determine the level of risk and the measure reviewed within a reasonable time. The DTI said that for the purposes of the SPS the EU regulatory system constituted 'sound science' and therefore no trade restriction could be imposed on a GMO or its products approved under that system. The situation in respect of article XX(g) was "less clear cut" there being no further set of rules to guide implementation.[89] The DETR wrote that while the Government was of the view that segregation would have been the better way to introduce GM crops into the UK, it was satisfied with the safety assessment carried out on the relevant products and that therefore any attempt to impose segregation as a condition of import would not be defensible under WTO rules.[90]

47. In this light we share Ministers' disappointment at the collapse of negotiations on the Biosafety Protocol to the UN Convention on Biological Diversity in February 1999 in the face of opposition from the grain exporting countries, members of the 'Miami Group'. We regard the 'advanced informed agreement' of those receiving shipments of GMOs (or live modified organisms (LMOs) as the protocol described them) as important to address the inevitable variations in the capacity of regulatory regimes around the world. Furthermore as we have seen in the UK voluntary restraint by industry can be negotiated to avoid 'legal entanglement' this will not be the case everywhere. There is a pressing need for multilateral rules to address the issues and concerns of GM products. Given that 'prior informed consent' already operates with apparent success with regard to transboundary movements of chemicals we regret that short-sighted self-interest has over-ruled a precautionary approach with respect to GMOs.

[88] Q341
[89] Appendix 18
[90] Ev p63

48. In line with our conclusions on the negotiation of the Multilateral Agreement on Investment we welcome UK and EU resistance to the subordination of the Protocol to the GATT. De facto subordination of multilateral environmental agreements is enough of a difficulty without enshrining a precautionary approach to free trade protection in legal text. **We believe that the explicit subordination of a multilateral environmental agreement, such as the Biosafety Protocol, to international trade rules would be a deeply unfortunate precedent to set. We recommend that the Government must make every effort to revive the negotiations on the Protocol and bring them to a satisfactory conclusion.** To complement work on multilateral rules on biotechnology we believe that the UK should take the lead in establishing an international scientific effort on the environmental, and other, implications of biotechnology and genetic modification subject in the same way that climate change has been approached.

49. Another aspect of the international dimension relates to evidence we heard from Sir Robert May that biotechnology may have a significant contribution to make to a second, more sustainable, "green revolution" in the light of forecast population growth and pressure on the worlds agricultural production - particularly in developing countries.[91] These issues are highly complex and controversial and go some way beyond the scope of this inquiry. However, they are also very important and we note that the Cabinet Committee has no member from the Department for International Development. **We recommend that a Minister from the Department for International Development be appointed to the Cabinet Ministerial Group on Biotechnology and Genetic Modification.** We regard this as important in the light of DfID's interest in the consistency of UK policies across the board as they impact upon developing countries and in view of doubts expressed by witnesses as to the positive contribution that GM technology could make to the agriculture of developing countries.[92]

Labelling for process

50. It is Government's policy that every product containing GMOs, or GM materials (protein or DNA) should be clearly labelled to enable consumers to make informed decisions about the food they eat.[93] The Government is pressing the Commission for detailed labelling rules also on additives and on animal feed. The Government stated that all Member States and the European Parliament agreed that labelling should be triggered by the presence of GM material with agreement on a *de minimis* level yet to be agreed.

51. This principle satisfies the concerns of those who do not want to eat GMOs or GM materials (above as yet undetermined thresholds). A further level of consumer choice might be provided by the labelling of all products derived from GM technology (logically this approach would extend to processes involving GM enzymes or non-food products such as jeans made of GM 'blue' cotton when and if they come available). This would allow the consumer to reject the technology on grounds other than health and safety (religious, ethical or environmental) and is termed "labelling for process". The Government's memorandum described a statutory requirement to label ingredients which did not actually contain GM materials as "unenforceable". Some have argued that this approach would be meaningless and carry the implication that all food have labels identifying what fertilisers, pesticides, herbicides etc. were used in its production.[94] We accept that such a requirement would be difficult to enforce, having to rely on audit rather than detection, but this is not an insurmountable objection and there are existing voluntary marketing approaches for other foods that rely on similar methods of verification. Indeed Mr Rooker gave us the example of beef labelled for method of slaughter and the more familiar example of eggs labelled for method of production was also suggested.[95]

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[91] Q104
[92] See Appendix 17 (World Development Movement)
[93] Ev p63
[94] HL 11, paragraph 137
[95] Q391

52. **We believe that there is likely to be an ever-growing demand for information about the food we eat - both about its constituent ingredients *and* the processes by which it has been produced and the wider impacts that those processes have (from ethical coffee to environmental tea).** The market may be relied on to attempt to meet that demand and increasing numbers of producers and retailers have responded to recent concerns over GM foods by removing GMOs from shelves and from products. It is vital that voluntary labels, and other initiatives, are understandable and consistent and backed up by verifiable audit trails. We recognise that a requirement to label for process with regard to GM-derived foods may not be a cost-effective answer to the need at the moment. **Whilst recognising the difficulties in securing labelling for process we regard it as a valuable goal and urge the Government to work with industry to achieve it.**

Liability

53. Civil liability in the UK liability for environmental damage is currently governed by the normal rules of tort law. For instance the common law tort of nuisance imposes liability where damaging weed seeds are allowed to escape onto neighbouring land, although application of this has yet to be tested in the courts.[96] The UK Environmental Law Association (UKELA) pointed out that the unique characteristics of biological agents are likely to cause problems for establishing proof of harm and causation.[97] Specific provisions governing liability for damage caused by the release of GMOs have been the subject of debate in both an EC and international context.

54. The European Parliament has proposed an amendment to the Deliberate Release Directive to include such provisions with a related requirement for sufficient liability insurance to be held by those "legally responsible for deliberate releases of genetically modified organisms". This is described as an incentive for industry to ensure the safety of their releases.[98] The report notes that in 1989 the Commission promised development of a general proposal on liability for environmental damage throughout the EU (including GMOs) but, despite a Green Paper in 1993, no proposal had been tabled.[99] In addition to the European Parliament's initiative we note that the question of the liability of the State for (negligent) decisions made by its regulators also needs to be considered.[100] The issue of liability was also discussed in the context of the negotiations on the Biosafety Protocol and proved contentious.

55. Mr Meacher told us that the Commission was working on a White Paper on the overall situation but that it might yet be "several" years before agreement is reached.[101] The Government wrote that it was considering the need for specific provisions in the light of what it saw as a balance between concerns about biotechnology (and calls for secure liability measures) and the achievement of rapid progress on the Directive in question.[102] **On grounds of promoting public confidence alone we see merit in the inclusion in the Deliberate Release Directive of specific provisions for the liability of those with responsibilities for the release of GMOs that cause environmental damage.** We note that with the farm-scale trials due to begin this year large-scale releases of GMOs are set to occur. It appears important that legal certainty is established over responsibility for damage as soon as possible. **We further recommend that the UK seek agreement within the EU for a provision on liability to be part of the EU's mandate for further negotiations on the Biosafety Protocol.**

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[96] Appendix 9, paragraph 7
[97] Appendix 16
[98] Report on the proposal for a European Parliament and Council Directive amending Directive 90/220/EEC on the deliberate release into the environment of genetically modified organisms (COM(98)0085 - 98/0072(COD)), Committee on the Environment, Public Health and Consumer Protection, 28 January 1999. Evidence from Friends of the Earth states that this proposal has been rejected by the Commission (Appendix 4).
[99] *Ibid*, Opinion, Committee on Research, Technological Development and Energy.
[100] Appendix 16
[101] Q392
[102] Ev p63

MINUTES OF PROCEEDINGS RELATING TO THE REPORT

TUESDAY 11 MAY 1999

Mr John Horam, in the Chair

Members present:

Mr Norman Baker
Dr Brian Iddon
Mr Malcolm Savidge
Mr Jonathan R. Shaw
Joan Walley

The Committee deliberated.

Draft Report (Genetically modified organisms and the environment: coordination of Government policy), proposed by the Chairman, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraph No. 1, postponed.

Paragraphs Nos. 2 to 55, read and agreed to.

Paragraph No. 1, brought up, read and agreed to.

Resolved, That the Report be the Fifth Report of the Committee to the House.

Ordered, That the Chairman do make the Report to the House.

Ordered, That the provisions of Standing Order No. 134 (Select committees (reports)) be applied to the Report.

Several papers were ordered to be appended to the Minutes of Evidence.

Ordered, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

[Adjourned till Thursday 13 May 1999 at Ten o'clock.

LIST OF WITNESSES

Thursday 15 April 1999

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ENGLISH NATURE

Tuesday 20 April 1999

OFFICE OF SCIENCE AND TECHNOLOGY

Tuesday 27 April 1999

Thursday 29 April 1999

DEPARTMENT OF THE ENVIRONMENT, TRANSPORT AND THE REGIONS

THE MINISTRY OF AGRICULTURE FISHERIES AND FOOD

LIST OF MEMORANDA INCLUDED IN THE MINUTES OF EVIDENCE (HC384-II)

Memoranda submitted by:

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